

### REMARKS

Reconsideration of the rejections set forth in the Office action mailed October 1, 2004 is respectfully requested. Claims 23-33 are pending; claims 23-27 are currently withdrawn from consideration.

#### I. Amendments

The specification has been amended to include the issued patent number of the parent application.

Claim 28 is amended for clarity. Support is found, for example, at page 5, lines 13-16 of the specification, which describes a method of preparation of the claimed compositions; e.g.:

"...segments are removed from the ends of each restriction fragment.... Excised segments from the same fragment are ligated together to form a pair of segments." Support for the amendments is also found in original claim 2, which also recites a process by which such a composition is formed. The process of claim 2 includes the steps of "removing a segment of nucleotides from each said end" [of each of a population of restriction fragments, as recited in original claim 1] and "ligating the segment from each said end together to form a pair of segments".

Claim 32 is amended to clarify that the composition includes sequence tags from each of the restriction fragments with at least a 99% probability, as described, for example, at page 9, lines 12-24 of the specification.

No new matter is added by any of the amendments.

#### II. Specification

As noted above, the specification has been amended to include the issued patent number of the parent application, as requested..

#### III. Rejections under 35 U.S.C. §112, Second Paragraph

Claims 28 and 32 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The cited phrase in claim 28, "each pair of said plurality being from opposite ends of a

restriction fragment of genomic DNA", has been amended to "each said ligated pair of sequence tags... consists of opposite end segments of a single said restriction fragment of said genomic DNA". This language clarifies that each pair of sequence tags comprises a sequence from each end of a restriction fragment of genomic DNA, as suggested by the Examiner (page 2 of Office Action, last paragraph).

Claim 32, in view of the amendments to parent claim 28, has been amended to recite "a plurality of oligonucleotides", in exact keeping with the language of parent claim 28.

In view of the foregoing, the applicants submit that amended claims 28 and 32 comply with the requirements of 35 U.S.C. §112, second paragraph.

#### IV. Rejections under 35 U.S.C. §102(e)

Independent claim 28 and its dependent claims 29-30 and 32 were rejected under 35 U.S.C. §102(e) as being anticipated by Sapolsky *et al.*, U.S. Patent No. 5,710,000. This rejection is respectfully traversed for the following reasons.

##### A. The Invention

The applicant's invention, as embodied in independent claim 28, comprises:

an oligonucleotide composition derived from restriction fragments of genomic DNA, said composition comprising: a plurality of oligonucleotides, each containing a ligated pair of sequence tags,

wherein each said ligated pair of sequence tags is from nine to eighteen basepairs in length and consists of opposite end segments of a single said restriction fragment of said genomic DNA.

##### B. The Prior Art

The Examiner has interpreted the disclosure of Sapolsky *et al.*, in which different type IIIs recognition sites, each recognition site being 9-18 basepairs in length, are located on opposite ends of restriction fragments, as teaching the limitations of independent claim 28 (page 3 of Office Action, last paragraph).

However, even if these recognition sites are considered to be the "sequence tags" of claim 28, two recognition sites on opposite ends of an intact restriction fragment of DNA, as described in Sapolsky *et al.*, cannot be considered "a ligated pair of sequence tags... from nine to eighteen basepairs in length".

Since the reference does not disclose all of the elements set out above in claim 28 and its dependent claims 29-33, the claims cannot be anticipated by this reference under 35 U.S.C. §102(e). In view of this, the applicant respectfully requests the Examiner to withdraw the rejection under 35 U.S.C. §102(e).

V. Rejections under 35 U.S.C. §102(b)

Independent claim 28 and dependent claims 29-31 and 33 were rejected under 35 U.S.C. §102(b) as being anticipated by Morgante *et al.*, PCT Pubn. No. WO 96/17082. The rejections are respectfully traversed in light of the following remarks.

A. The Invention

The applicant's invention, as described above, is directed to an oligonucleotide composition derived from restriction fragments of genomic DNA. The composition comprises a plurality of oligonucleotides, each containing a ligated pair of sequence tags, the ligated pair consisting of opposite end segments of a single said restriction fragment of the genomic DNA. These opposite end segments, ligated to each other, make up the ligated pair, which is nine to eighteen basepairs in length.

B. The Cited Art

Morgante *et al.* teach the ligation of synthetic oligonucleotide adaptors to the ends of DNA restriction fragments (as pointed out by the Examiner).

As described at page 51, lines 6-10 of the PCT specification, the adaptors are at least 10 nucleotides long, preferably at least 12 nucleotides long. As described at page 51, lines 6-10 of the PCT specification, the restriction fragments "receive adaptors at both ends". Therefore, the resulting adaptor-fragment-adaptor constructs would have to be greater than 20 nucleotides in length, and would typically be much longer, depending on the length of the fragment. Moreover, the adaptors are not ligated to each other, but to both ends of a DNA fragment. The constructs described in Morgante *et al.*, therefore, differ in various ways from the ligated pairs of sequence tags in the applicant's independent claim.

Since the reference does not disclose all of the elements set out above in claim 28 and present in claims 29-31 and 33, the claims cannot be anticipated by this reference under 35

U.S.C. §102(b). In view of this, the applicant respectfully requests the Examiner to withdraw this rejection.

VI. Conclusion

In view of the foregoing, the applicant submits that the claims under examination are in condition for allowance. A Notice of Allowance is, therefore, respectfully requested.

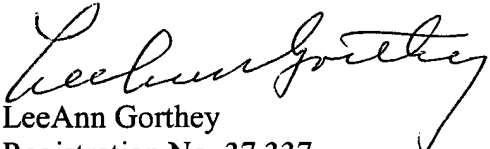
If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is encouraged to call the undersigned at (650) 838-4403.

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Respectfully submitted,

  
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